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Frank J. Bozzo, Esq.
DORSEY & WHITNEY LLP
Suite 3400
1420 Fifth Avenue
Seattle, WA 98101

EXAMINER

CAO, CHUN

ART UNIT

PAPER NUMBER

2115

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,296

Applicant(s)

DREXLER, ADRIAN J.

Examiner

Chun Cao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 June 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/5/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-42 are presented for examination.
2. The drawings were received on 6/11/02. These drawings are accepted.
3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The current title is imprecise.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitations "the stabilization device" in line 1 and "the time" in line 3. There are insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitations "the stabilization device" in line 1. There is insufficient antecedent basis for this limitation in the claim.

6. Due to the number of 35 USC § 112, second paragraph rejections, the examiner has provided a number of examples of the claim deficiencies in the above rejection(s), however, the list of rejections may not be all inclusive. Applicant should refer to these rejection(s) as examples of deficiencies and should make all the necessary corrections to eliminate the 35 USC § 112, second paragraph problems and place the claims in a proper format.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1-5, 7-12, 14-19, 21, 29-33, 35-40 and 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Ryu (Ryu), U.S. patent no. 6,525,988.

As per claim 1, Ryu discloses a delay locked loop control for a delay locked loop associated with a device responding to a system clock [fig. 1], the delay locked loop control comprising:

a device inactive decoder providing a device inactive signal when the delay locked loop need not continue adjusting a delay interval to synchronize with the system clock [col. 1, lines 56-58; col. 2, lines 13-15];

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a stabilization detection device [fig. 1] providing a stabilization signal when the device is stable after reacting to a command applied to the device [col. 4, lines 29-35]; and

a delay lock coupled to the device inactive decoder [fig. 1] and the stabilization detection device for locking the delay interval on receiving both the device inactive signal and the stabilization detection signal [col. 4, line 61-col. 5, line 18; col. 5, lines 25-32].

As per claim 2, Ryu discloses that the device inactive signal indicates the delay locked loop need not continue adjusting the delay interval because the device has received a self-refresh command [col. 1, lines 52-58].

As per claim 3, Ryu discloses that the device inactive signal indicates the delay locked loop need not continue adjusting the delay interval because the device has received a device deselect command [fig. 1; col. 4, line 61-col. 5, line 18; col. 5, lines 25-32].

As per claim 4, Ryu discloses that the device inactive signal indicates the delay locked loop need not continue adjusting the delay interval because the device has received a predetermined number of no operation commands [fig. 1; col. 4, line 50-col. 5, line 18; col. 5, lines 25-32].

As per claim 5, Ryu discloses that the stabilization detection device is a delay device which indicates the device is stable after allowing passage of a predetermined interval from a time the command last received was received by the device [fig. 1; col. 4, line 50-col. 5, line 18; col. 5, lines 25-32].

As per claim 7, Ryu discloses that the delay lock also locks a delay locked loop clock device [fig. 1; col. 4, line 50-col. 5, line 18; col. 5, lines 25-32].

As per claim 8, Ryu discloses that a delay locked loop control for a delay locked loop associated with a device responding to a system clock [fig. 1], the delay locked loop control comprising:

a device inactive decoder providing a device inactive signal when data will not be read from or written to the device [col. 1, lines 56-58; col. 2, lines 13-15]; and

a delay lock coupled to the device inactive decoder for locking a stable delay interval on receiving the device inactive signal [fig. 1; col. 4, line 61-col. 5, line 18; col. 5, lines 25-32].

As per claim 9, Ryu discloses that the device inactive signal indicates data will not be read from or written to the device because the device has received a self-refresh command [col. 1, lines 52-58].

As per claim 10, Ryu discloses that the device inactive signal indicates data will not be read from or written to the device because the device has received a device deselect command [fig. 1; col. 4, line 61-col. 5, line 18; col. 5, lines 25-32].

As per claim 11, Ryu discloses that the device inactive signal indicates data will not be read from or written to the device because the device has received a predetermined number of no operation commands [fig. 1; col. 4, line 50-col. 5, line 18; col. 5, lines 25-32].

As per claim 12, Ryu discloses that the stable delay interval is reached after allowing passage of a predetermined interval from a time the command last received was received by the device [fig. 1; col. 4, line 50-col. 5, line 18; col. 5, lines 25-32].

As per claim 14, Ryu discloses that the delay lock also locks a delay locked loop clock device [fig. 1; col. 4, line 50-col. 5, line 18; col. 5, lines 25-32].

As per claim 15, Ryu discloses a DRAM device [col. 4, line 18] comprising:
a plurality of rows of DRAM memory cells, the DRAM memory cells receiving, storing, and outputting data; an input/output system operably connected to the rows of DRAM memory cells for communicating data between the rows of DRAM memory cells and an external system; a refresh system for refreshing contents of the DRAM memory cells; a control logic array, the control logic array being operably interconnected with the input/output system and responsive to command from the external system [col. 1, lines 30-33; col. 4, lines 11-17]; and

a delay locked loop subsystem synchronizing data communications between the input/output system and the external system, the delay locked loop having a delay locked loop control [fig. 1] comprising:

a device inactive decoder providing a device inactive signal when the delay locked loop need not continue adjusting a delay interval to synchronize with the system clock [col. 1, lines 56-58; col. 2, lines 13-15];

a stabilization detection device providing a stabilization signal when the device is stable after reacting to a command applied to the device [col. 4, lines 29-35]; and

a delay lock coupled to the device inactive decoder and the stabilization detection device for locking the delay interval on receiving both the device inactive signal and the stabilization detection signal [col. 4, line 61-col. 5, line 18; col. 5, lines 25-32].

As to claims 16-19 and 21 are written in means plus function and contained the same limitations as claim 2-5 and 7. Therefore same rejection is applied.

As to claims 29-33, 35-40 and 42, claims 1-5, 7-11 and 14 basically are the corresponding elements that are carried out the method of operating steps in claims 29-33, 35-40 and 42. Accordingly, claims 29-33, 35-40 and 42 are rejected for the same reason as set forth for claims 1-5, 7-11 and 14.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 6, 13, 20, 22-28, 34 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu (Ryu), U.S. patent no. 6,525,988 in view of what was well known in the art.

As to claims 6, 13, 20, 34 and 41, Examiner takes Official Notice that the stabilization detection device is a voltage detection device is well known in the art of computer system. Such as, Ryu discloses a circuit for stabilization signal transition from a self-refresh mode to a standby mode [col. 4, lines 45-60], therefore Ryu may comprise

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a voltage detection device which indicates the device is stable while in standby mode by determining voltage fluctuations caused by receipt of the command during the signal transition.

It would have been obvious to one of ordinary skill in the art at time the invention to employ the use of voltage detection device to provide reliable means of indicating the stabilization of the device.

As per claim 22, Ryu discloses that a system comprises a DRAM device including:

at least one of the DRAM devices comprising: an input/output system operably connecting the plurality of DRAM devices the system; a refresh system for refreshing contents of the DRAM memory cells; control logic, the control logic being operably interconnected with the input/output system and responsive to command from the external system; a delay locked loop subsystem synchronizing data communications between the input/output system and the system [col. 1, lines 30-33; col. 4, lines 11-17]; and a delay locked loop control [fig. 1] comprising:

a device inactive decoder providing a device inactive signal when the delay locked loop need not continue adjusting a delay interval to synchronize with the system clock [col. 1, lines 56-58; col. 2, lines 13-15];

a stabilization detection device providing a stabilization signal when the device is stable after reacting to a command applied to the device [col. 4, lines 29-35]; and

a delay lock coupled to the device inactive decoder and the stabilization detection device for locking the delay interval on receiving both the device inactive

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signal and the stabilization detection signal [col. 4, line 61-col. 5, line 18; col. 5, lines 25-32].

Examiner takes Official Notice that a computer system is well known in the art. the computer system comprises the limitations as set forth in claim 22 are also well known in the computer art. Such as the computer comprises a processor and an input device, operably connected to the processor, allowing data to be entered into the computer system; an output device, operably connected to the processor, allowing data to be output from the computer system; and a system memory operably connected to the processor through a system bus, the system memory comprising a plurality of DRAM devices having a plurality of rows of DRAM memory cells, the DRAM memory cells receiving, storing, and outputting data.

It would have been obvious to one of ordinary skill in the art at time the invention, Ryu may implement a computer system to perform the functionality as set forth in the invention to employ the use of the delay locked loop control circuit [col. 10, lines 6-19].

As to claims 23-28 are written in means plus function and contained the same limitations as claim 2-7. Therefore same rejection is applied.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Li et al., US patent no. 6,438,060, discloses a control circuit disables a DLL circuit during a power down mode.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun Cao whose telephone number is 571-272-3664. The examiner can normally be reached on Monday-Friday from 7:30 am-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chun Cao

Dec. 14, 2004